Water quality influences the presence of Streptococcus agalactiae in cage cultured red hybrid tilapia, Oreochromis niloticus × Oreochromis mossambicus

ABSTRACT

Attempts were made to identify the association between water quality parameters and the presence of Streptococcus agalactiae in cage cultured red hybrid tilapia, Oreochromis niloticus × O. mossambicus. Fish from commercial floating net cage-culture systems in a river and lake were randomly sampled over a 24-month period. Swabs from the brains, eyes and kidneys were streaked directly onto blood agar to isolate S. agalactiae. Water temperature, dissolved oxygen, pH, clarity, ammonia, nitrite, sulfide, rate of water flow and depth of water at sampling sites were measured at the same time of fish sampling. The prevalence of fish that were cultured positive to S. agalactiae was significantly higher in lake compared with river. The length and weight of the infected fish were between 9 and 33 cm, and between 20 and 760 g respectively. There was a significant and positive strong correlation between the presence of S. agalactiae and fish mortalities in lake. All water quality parameters showed significant differences between river and lake. However, only water temperature, clarity and pH of lake and the ammonia, temperature and dissolved oxygen in river showed significant correlation with the presence of S. agalactiae in the cultured fish. It was concluded that several unfavourable water quality in the fish farm influencing the presence of S. agalactiae in cultured red hybrid tilapia.

Keyword: Streptococcus agalactiae; Red hybrid tilapia; Water quality